Acoustics Research Centre
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INVOLVING THE PUBLIC IN NOISE SURVEYS VIA MOBILE TECHNOLOGY

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INTRODUCTION TO THE PROJECT

- To enable and encourage public participation in a large scale environmental noise survey

- The engagement will lead to a better public understanding of the impact of the acoustic environment on the quality of life

- The term **soundscape** is used to describe these differing acoustic environments

INTRODUCTION TO THE PROJECT

- Recent developments in mobile technology will be utilised, including:

Mobiles

PDA's

Mobile/PC connectivity

Distributed application technologies

- Advances in mobile computing allow a vast number of people to participate in sound surveys

THE SOUNDSCAPE CONCEPT

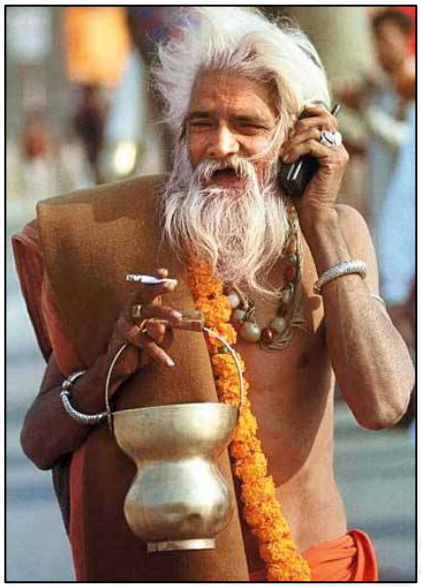
•Soundscapes play an important part in our lives; making us feel comfortable, productive, happy or uneasy and distracted

•Soundscapes provide the contextual references that contribute to our feelings of belonging and place

•Creating the most appropriate soundscape is a challenge for the planning, development and construction of spaces

•Purely acoustic measurements of these soundscapes can never fully assess its impact on the inhabitant

PUBLIC PARTICIPATION



•The huge potential for public participation in noise surveying using mobile and internet technologies has yet to be utilised

•A vast majority of the public carry mobile phones with comparatively sophisticated digital signal processing technology

PUBLIC PARTICIPATION

- The opinions of individual members of the public can be used to make inferences on the subjective effects of acoustic environments

- Linking these individual responses to objective acoustic data will eventually ascertain the perceived “Quality” of a soundscape

- Through empowering the public a more representative and complete analysis of the acoustic environment can be achieved

METHODOLOGY STAGE ONE

- Java Mobile Edition application downloaded to participants handset from home PC

- Exploits audio capture functionality of the mobile phone

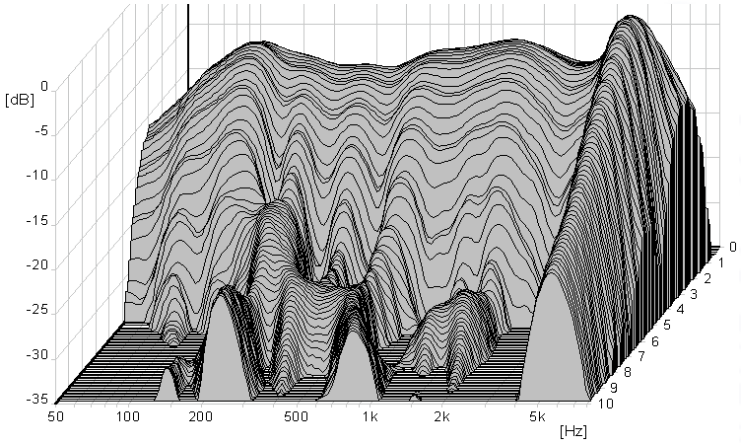
- Participants encouraged to make short recordings of soundscapes

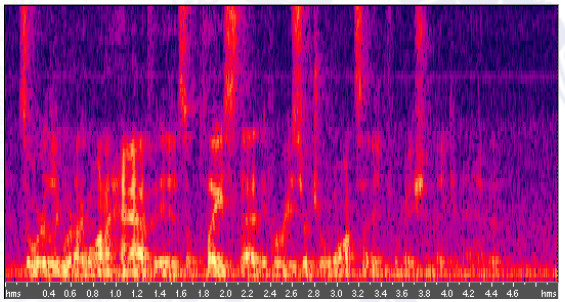
- Process of calibration must be devised to reduce systematic error

METHODOLOGY – STAGE TWO

- Soundscapes and responses uploaded to home PC from mobile device

- Software suite providing range of interactive multimedia activities to engage and educate participants





- Soundscapes can be analysed and interacted with using different forms of acoustic visualisation

METHODOLOGY – STAGE THREE

- Server application collates and presents data received from PC application

- Using XML web services to automate data transferral between all technologies

- Visual feedback will be provided to illustrate participants contribution to the project

- Participants able to view contributions from other members and share opinions on their soundscapes

- Potential to integrate project into social networking sites, e.g: Facebook

METHODOLOGY BENEFITS

•Use of these technologies enables environmental noise data from a large participant base to be automatically collated and analysed at our main web server

•Enables participants to include subjective responses to the soundscapes they inhabit

•Data gathered can be used to better inform strategies for environmental noise abatement and the enhancement of public spaces through increased soundscape consideration

PILOT STUDY IN SCHOOLS

•Involving 300 KS4 students to enhance the public engagement benefits of the project and develop optimum sampling methodologies

•Collaborating with 10 Manchester schools, where two hour interactive lessons will be carried out in each

•Lessons designed to promote interest in Environmental Science and Acoustics utilising the project's technologies alongside acoustic measurement equipment

•Calibration techniques, applications and web-based resources prototyped to asses significance of both systematic and stochastic errors

NATIONAL SURVEY

- Initial target of 3000+ participants taking part
- Funds available for project promotion

- Participants will have access to a well publicised multimedia web site detailing issues related to Environmental Science, Acoustics and KS4 resources
- Research findings will be viewable allowing participants to identify their contribution to the work being done

ENGAGEMENT EVALUATION

- Questionnaires sent out to participants
- Message board on website promoting discussion and feedback

- Pilot study incorporating student assessment to judge engagement
- Follow up work set to assess students understanding of key concepts

QUESTIONS?

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